GIS Views

Table of Contents

Introduction

The GIS portion of data warehouse is an easy to use tool for performing a variety of queries on contract data relating to the cities, counties, legislative districts, and congressional districts within the state of Washington.

We can query on grants, loans and other contract types and display the results on an interactive map. The query can be filtered on a variety of criteria such as contract type, purpose, Department of Commerce divisions, programs, ARRA, infrastructure, Commerce purpose and purpose group, date, etc. Results are reflected on map, charts, as well as tabular reports. The following guide explains the reporting tool in more details.

1   System Requirements

The GIS application is accessible from any workstation within Department of Commerce intranet using Internet Explorer browser (currently only IE6 is supported). Although, higher resolution is recommended, the minimum required display resolution is 1024 by 768.

It will be possible to access the GIS application from outfacing networks in the future.

2   Purpose Dashboard

The grid is summarized by purpose group. Purpose group data is based on primary purpose assigned to each contract. Follow this link for Purpose Group definitions.   The bar and map default to all purpose groups. Clicking on a purpose group in the gird will filter the bar and map for that purpose group. See the Hover over window section below for tips about using the GIS map. See the Filters section of Perspective Charts for tips about using the filters.

3   Project Locations

Users can pick a county then see the project site locations for a division. Select a county from the drop down list then select a division. The projects for that county will be listed on the right and plotted on the map. Click on a marker or on a project name and details about the project are displayed.

4   GIS Queries

GIS interface provides a friendly environment for perform a variety of queries.

The GIS user interface is shown here:
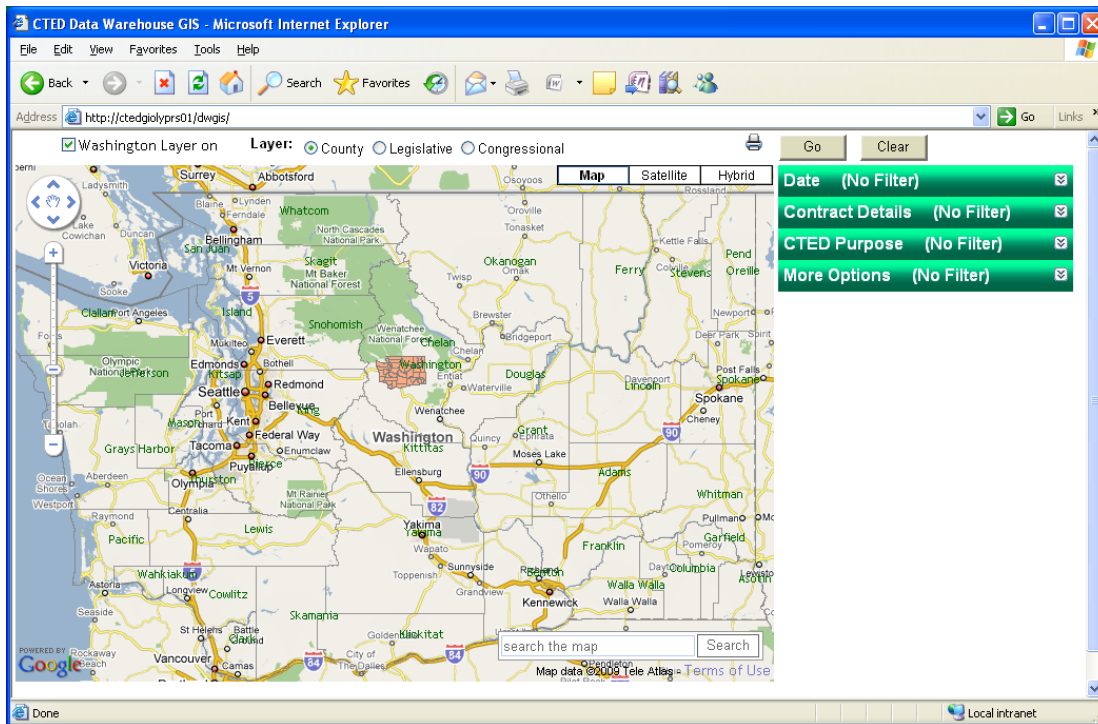
4.1   Performing a Query

It is possible to query on three different map layers; county (default), legislative, or congressional layer.

All other query options are inside query collapsible panels:

4.1.1   Date selection
The date selection component consists of three radio buttons and two textboxes.

4.1.2   Date Radio Buttons
Active: contract was in 'open' status within selected date

Start: contract start date is within the selected date

End: contract termination date is within the selected date

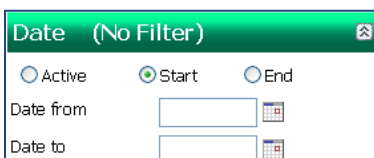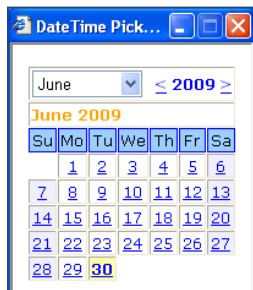**'Date From' and 'Date to' textboxes:** it is possible to enter dates in mm/dd/yyyy format or pick the date interval using the provided calendar control which is similar to other web applications for purchasing a ticket or booking a flight.

Here are some important notes about date selection:

- Selecting a date is optional and if no date is selected, there would be no filter on date
- If only a date value for "Date from" field is entered and "Date to" field is left blank, the selection is valid and all contracts after the selected "Date from" is returned.
- If only a date value for "Date to" field is entered and "Date from" filed is left blank, the selection is valid and all contracts before the selected "Date to" is returned.

4.1.3   Contract Details
The second query panel contains a series of criteria that will allow the user to further filter the results.

4.1.3.1   Infrastructure and Recovery Act filters:
Choices for each filter are All, Yes and No.

Infrastructure	ARRA	Results Include
All	All	All contracts
All	Yes	All ARRA contracts
All	No	All contracts, excluding ARRA

Yes	All	All infrastructure contracts
Yes	Yes	Contracts that are both ARRA and infrastructure
Yes	No	Infrastructure contracts that are not ARRA contracts
No	All	All contracts, excluding infrastructure
No	Yes	ARRA contracts that are not infrastructure
No	No	Contracts that are not infrastructure, and not ARRA

ARRA = American Recovery and Re-Investment Act

4.1.3.2 Contract Type

You may select one or more contract type from the available contract types list. Selecting the default Option of '*ALL' returns all contract with no filter on contract type.

4.1.3.3 Client Services OFM Purpose

The purpose list box is only available if 'Client Services' from the contract type list box is selected. Purpose list box allows further filtering on contracts of type 'Client Service' by selecting specific purpose(s).

4.1.3.4 Division

You may select one or more division from the list of Department of Commerce divisions. Leaving the default selection of '*ALL' returns all contracts without any filter on divisions.

4.1.3.5 Program

You may select one or more program from the available program list. Leaving the default selection of '*ALL' will result in a query without any filter on programs.
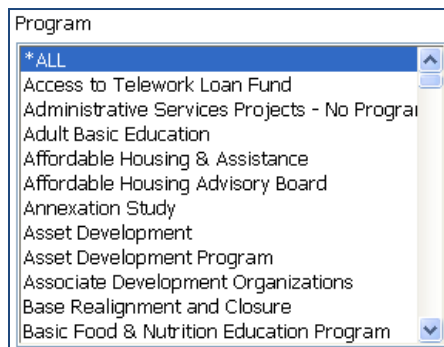
Program list box is a long list with many programs which may not be feasible to find and select programs easily. If you know the specific Department of Commerce division for a program, it is possible to select the division first and as a result only programs related to that division being displayed on the program list. In the following example selecting 'Energy Policy' Division results in displaying five programs associated with this division.
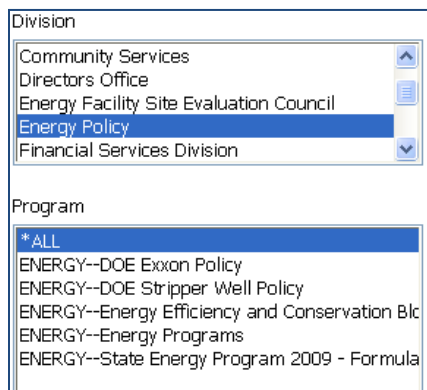
4.1.4   Commerce Purposes

Purpose Group and Purpose list boxes allow the user query on contracts with a specific purpose. Purpose group data is based on primary purpose assigned to each contract. For more information about purposes and purpose groups see Purpose and Purpose Group.
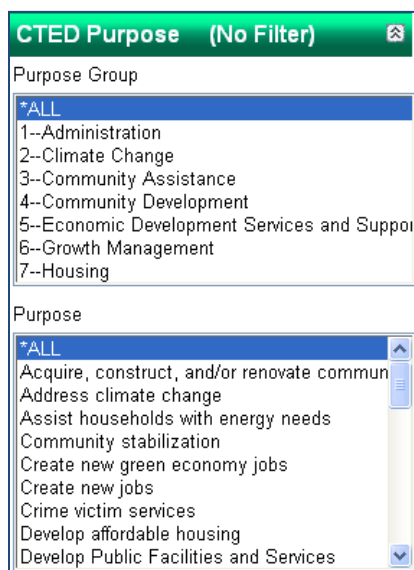
If a purpose group is selected, only purposes within that purpose group are displayed. In the following example selecting 'Community Assistance' purpose group results in displaying only purposes within this purpose group.

Purpose Group

```
*ALL
1--Administration
2--Climate Change
3--Community Assistance
4--Community Development
5--Economic Development Services and Suppor
6--Growth Management
7--Housing
```

Purpose

```
*ALL
3--Support families to self-sufficiency
3--Crime victim services
3--Assist households with energy needs
3--Support community health and safety
3--Support food banks
```

4.1.5   More Options

More Options   (No Filter)

Map Paint Option: ⦿ Amount ⚪ Contract

✱ Amount >=   [   ]
And <=   [   ]

☑ Include cities in the county rollup
☐ Show pie chart
☐ Generate contract report

4.1.5.1   Map Paint Option

The map paint option radio button allows the resulting map to be painted based on the dollar amount or the number of contracts. Amount is the default paint option.

If the amount radio button is selected, four color codes based on total contract amount for counties (or legislative or congressional districts) are created. A sample query run based on dollar amount is shown here:

County wide contracts: 205
Amount: $111,771,588
Legend (total per county):
None
85,542-676,778
676,779-1,131,280
1,131,281-3,302,431
3,302,432-23,019,357
State wide contracts: 6
State wide amount: $372,499
All contracts: 211
Total Amount: $112,144,087
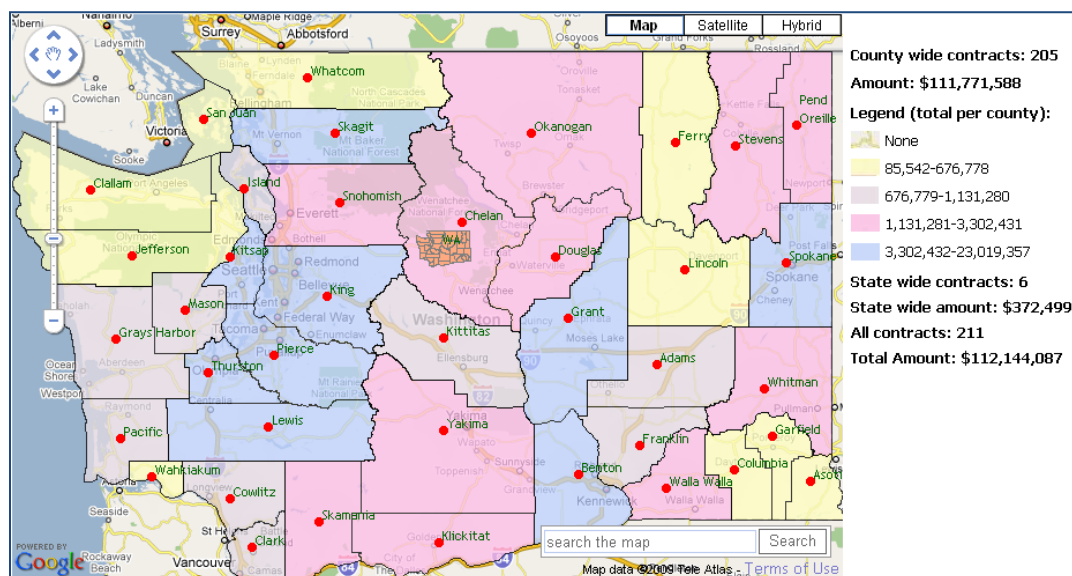
The boundary values for paints categories are chosen in a way to allow each paint category with about the same number of counties.

If the contract radio button is selected, all the counties (or legislative or congressional districts) meeting the query criteria are divided into four categories based on their total number of contracts. The following picture shows the same query as shown above with the difference of number of contracts as the paint option.
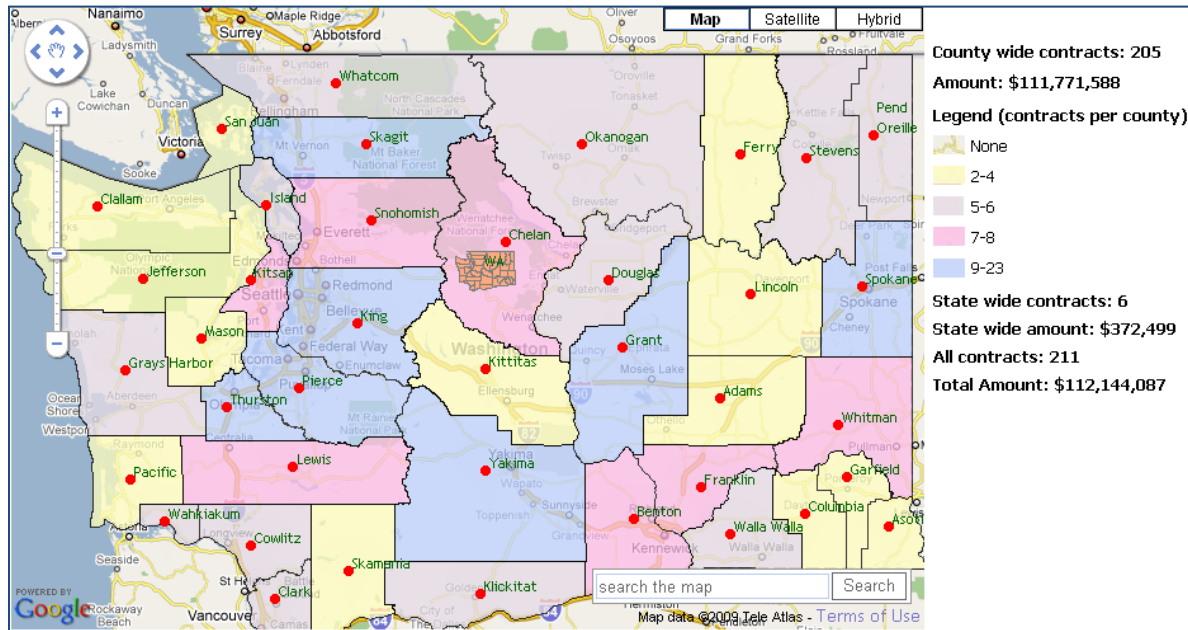
4.1.5.2 Query on contracts with a certain amount range:

There are two text boxes which allow you to enter the lower and upper range for contract amount. This will result on contract with benefiting jurisdiction amount within the selected amount.

Similar to the date option, you may enter a lower integer value and/or an upper integer value for the amount. For example entering 10000 for the 'And <=' text box will result in a query on all contracts with funding of less or equal to $10,000.

The entered value for amount is for a given benefiting jurisdiction which could be different from the total contract amount.

### 4.1.5.3 Check boxes within More Options

- **Include cities in the county rollup**: if this checkbox is checked (default), all city wide contracts will be included on county wide contracts. If this checkbox is unchecked, only countywide contracts are considered.

- **Show pie chart**: if this check box is checked, a countywide (or legislative/congressional district) pie chart along with query result is generated. The report section contains more details about pie charts.
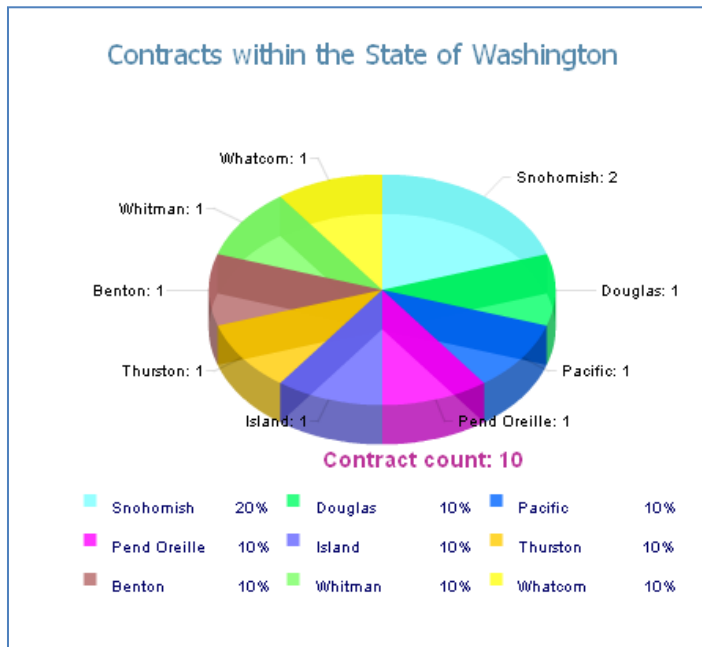
- **Generate contract report**: if this check box is checked, a countywide (or legislative/congressional district) report containing each contract detail along with query result is generated.

	Contract Count	10
	Total Amount	$9,575,519

Jur IDDesc	Contract Number	Type	Division	Program	CTED Purpose G	CTED Purpose	Start Date	Term Date	Jur. Amt
Douglas	DP09-952-033	Loan	PWB	DWSRF	Community Assistance	Support community health and safety	06/15/2009	10/01/2029	$1,262,500
								Douglas	$1,262,500
								Count	1
Everett	DM09-952-032	Loan	PWB	DWSRF	Community Assistance	Support community health and safety	06/29/2009	10/01/2029	$3,030,000
								Everett	$3,030,000
								Count	1
Ilwaco	PR09-951-050	Loan	PWB	PWTF	Economic Development Services and Support	Environmental improvements	06/10/2009	07/01/2014	$68,850
								Ilwaco	$68,850
								Count	1

Report date: 7/6/2009 9:42:47 AM   Page 1 of 3

- When "Generate contract report" option is checked, more report related options will be available as shown in this snapshot.

- **Output Format** allows the user to select report format from available formats such as PDF, Excel, CSV, and so on.
- **Report Columns** option allows the user to select report columns that will construct the report.

4.1.6   Go and Clear Buttons

- **Go button:** After selecting all needed query options, click on this button to produce result. GIS query results come in different flavors such as map, reports and graphs which will be explained in next sections.

- **Clear button:** Clicking on this button will clear the previous query result and all query options will reset to their default values.

4.1.7   Query on a Specific county or district

It is possible to perform query on one or more county or legislative or congressional district.
Let's explain this option with a simple example:

Question: We are looking for Projects with purpose of community Assistance in Yakima and Lewis County since the beginning of calendar year 2009:

Steps to perform the above query:

- Select or type 1/1/2009 from Date calendar for the "Date from" field:

- Select "Community Assistance" from "Purpose Group" within "Commerce Purpose" panel

- If you want to have a detailed report along with the result summary, check the "Generate Contract Report" check box within "More Options" panel

- Move the mouse over the center of Yakima County to see the tooltip for Yakima county as show here:

If you have previously run a query, you may see a tooltip with more information within its box which is fine.

Double click on the map while the tooltip is still visible. This will cause the Yakima county's color change to a golden color as shown here:

- Do the same step above for Lewis county to select Lewis county as well.
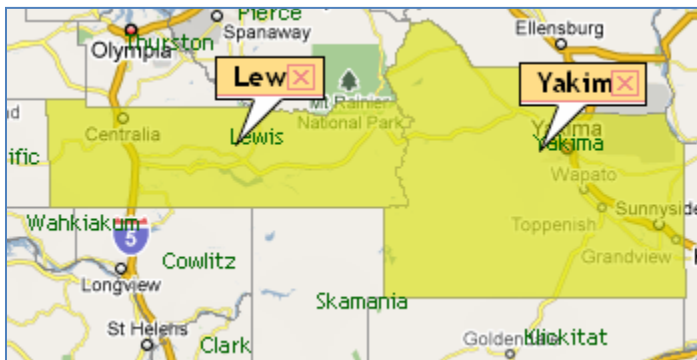
- Click on Go button to run the query.
  If all the steps are done properly, a result and report similar to the following screen shots is returned:

☑ Washington Layer on **Layer:** ⦿ County ○ Legislative ○ Congressional

Map | Satellite | Hybrid

Go | Clear

Selected counties: Yakima;Lewis

Contract count: 7

Total Amount: $4,344,933

Date (Filtered)	⌄
Contract Details (No filter)	⌄
Commerce Purpose (Filtered)	⌄
More Options (No filter)	⌄

search the map | Search

Map data ©2009 Tele Atlas — Terms of Use

POWERED BY Google

Query on start date. From: 1/1/2009 -- CTED Purpose Group: Community Assistance 0 <= Amount <= 999999999 (Include cities rollup--True) Selected counties: Yakima;Lewis

| | | | | | Contract Count | 7 | | |
| | | | | | Total Amount | $4,344,933 | | |

Jur IDDesc	Contract Number	Type	Division	Program	COM Purpose	Start Date	Term Date	Jur. Amt
Lewis	F09-32100-009	Client Services	CS	CSBG	Support families to self-sufficiency	01/01/2009	09/30/2010	$99,213
Lewis	09-64009-009	Grant	LG	CDBG	Support families to self-sufficiency	01/01/2009	02/28/2010	$39,165
							Lewis	**$138,378**
							Count	**2**
Yakima	09-32106-080	Client Services	CS	LIHEAP	Support families to self-sufficiency	01/01/2009	09/30/2009	$1,830,432
Yakima	09-32106-073	Client Services	CS	LIHEAP	Support families to self-sufficiency	01/01/2009	09/30/2009	$1,830,432
Yakima	09-32100-022	Client Services	CS	CSBG	Support families to self-sufficiency	01/01/2009	09/30/2010	$305,913
Yakima	09-64009-012	Grant	LG	CDBG	Support families to self-sufficiency	01/01/2009	02/28/2010	$188,697
Yakima	F09-31701-203	Grant	CS	VAWATR	Crime victim services	06/01/2009	12/31/2010	$51,081
							Yakima	**$4,206,555**
							Count	**5**

Query on start date. From: 1/1/2009 -- CTED Purpose Group: Community Assistance 0 <= Amount <= 999999999 (Include cities rollup--True) Selected counties: Yakima;Lewis

- Similarly, query on specific legislative districts or congressional district could be performed. It worth mentioning when the map layer changes, you might not see the tooltips on the map for the first run in order to select a specific county, legislative, or congressional district. Running any query or clicking on clear button will make the map tooltips available.

4.2   GIS Map

GIS map consist of two layers; Google map and ESRI county (or legislative or congressional district) layer. The lower layer is the Google map which has the typical functionalities of Google map with its toolbar; such as, map and satellite view, zoom and navigation pans, and so on.
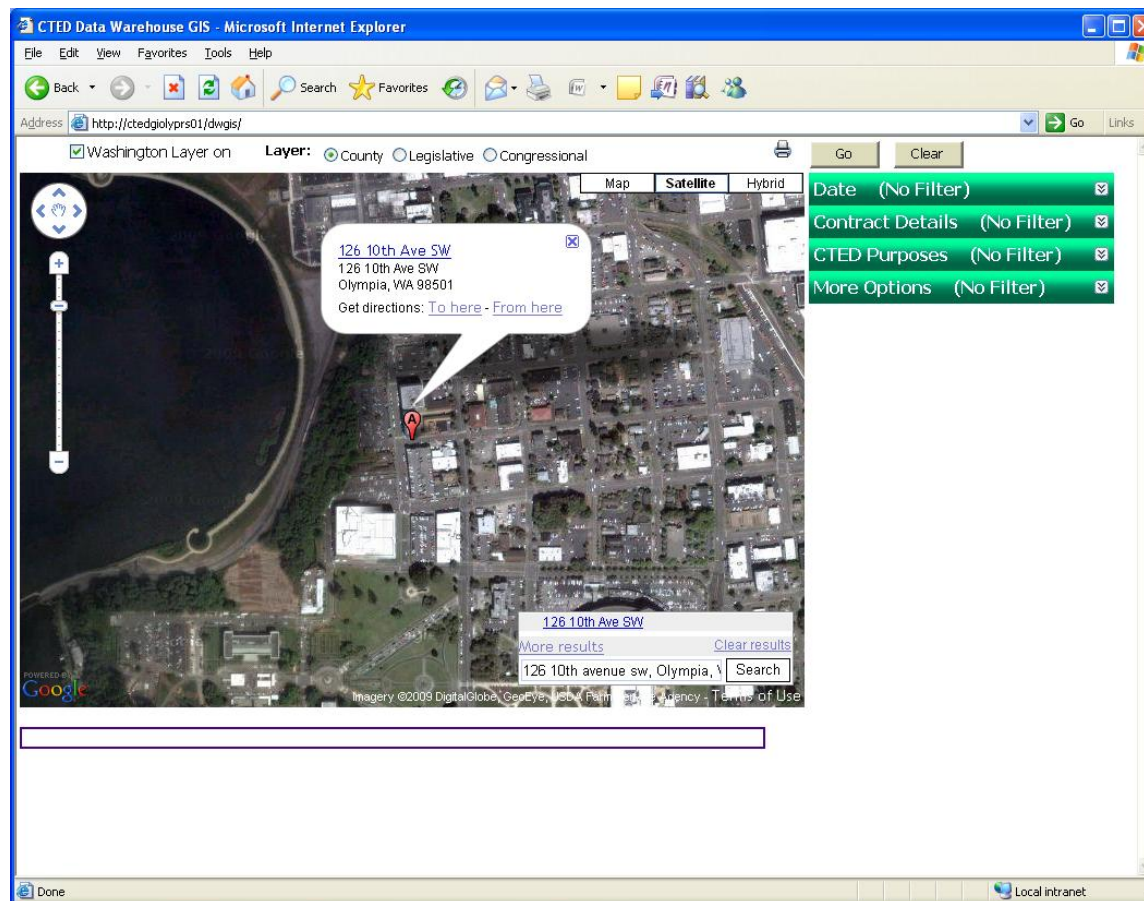
4.2.1   Washington layer selection checkbox

This checkbox has its default value as checked. If you uncheck the Washington layer checkbox, it removes the top ESRI map layer and only the Google map layer will be available.

4.2.2   Layer selection radio buttons

This set of radio buttons allows the user to switch between different map layers. County layer is the default selected layer which makes all query results being aggregated among the counties.
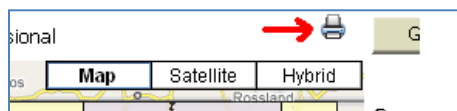
If the legislative or congressional layer button is selected, all query results will be based on legislative or congressional districts. The following snapshot shows a sample query based on congressional district.
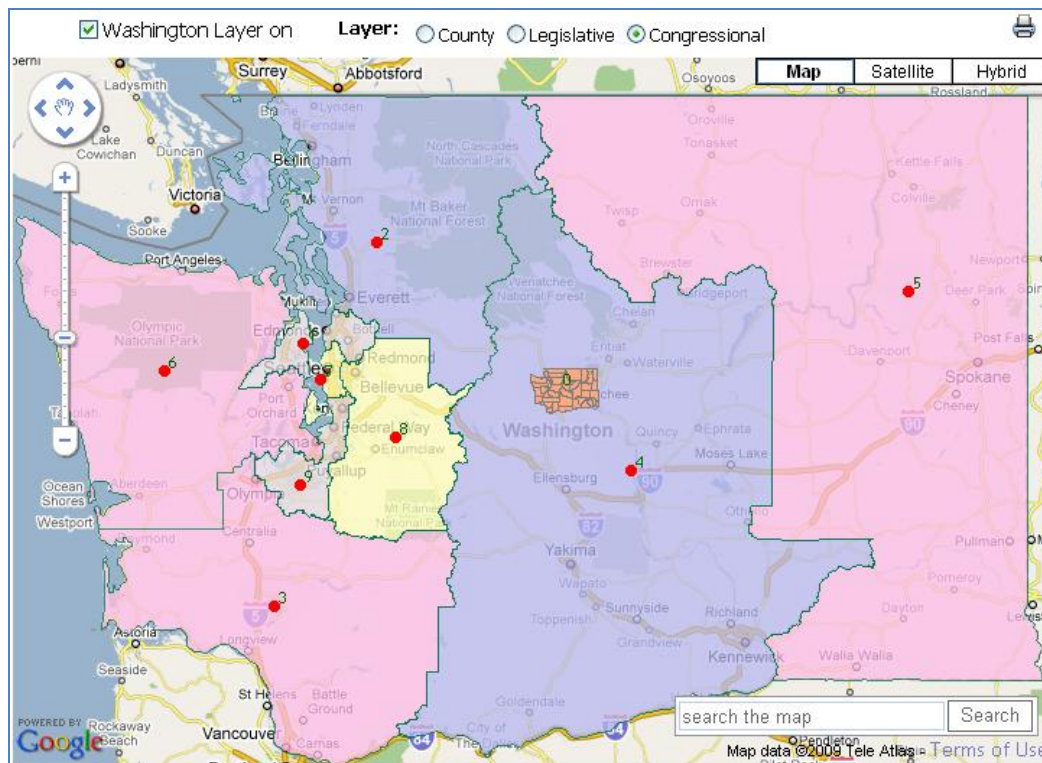
4.2.3 Printing a map

You may print the visible map by clicking on print icon located on top of the page beside the Go button.

Clicking on print icon will open the print option page which allows you to type the desired title for the map. The print map interface allows you may to pick the color code for the map paint categories or you may leave it as is to select the default colors.
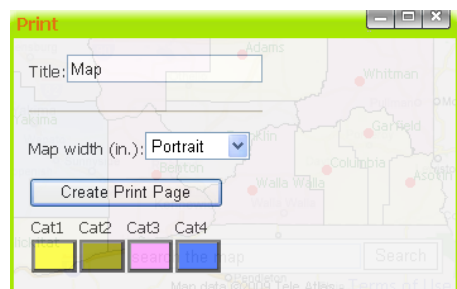
4.3 A GIS Query Example:

When a query is performed, the map content and legend is updated and repainted based on the query result and a variety of results are shown on the main page or as a separate browser Windows pops up.

In order to better understand and analyze the results, let's find the answer to this question:

Question: What Department of Commerce has done for the purpose of "Community Assistance" within the state of Washington from July 1, 2007 till June 30, 2009?

Solution: First select 7/1/2007 as "Date from" and 6/30/3009 as "Date to" option from Date panel. Then, select "Community Assistance" from purpose group list in Commerce Purposes panel. Leave all other options as their default value.

- Click on "Go" button to run the query. After few seconds the map content refreshes and a result like this will appear:
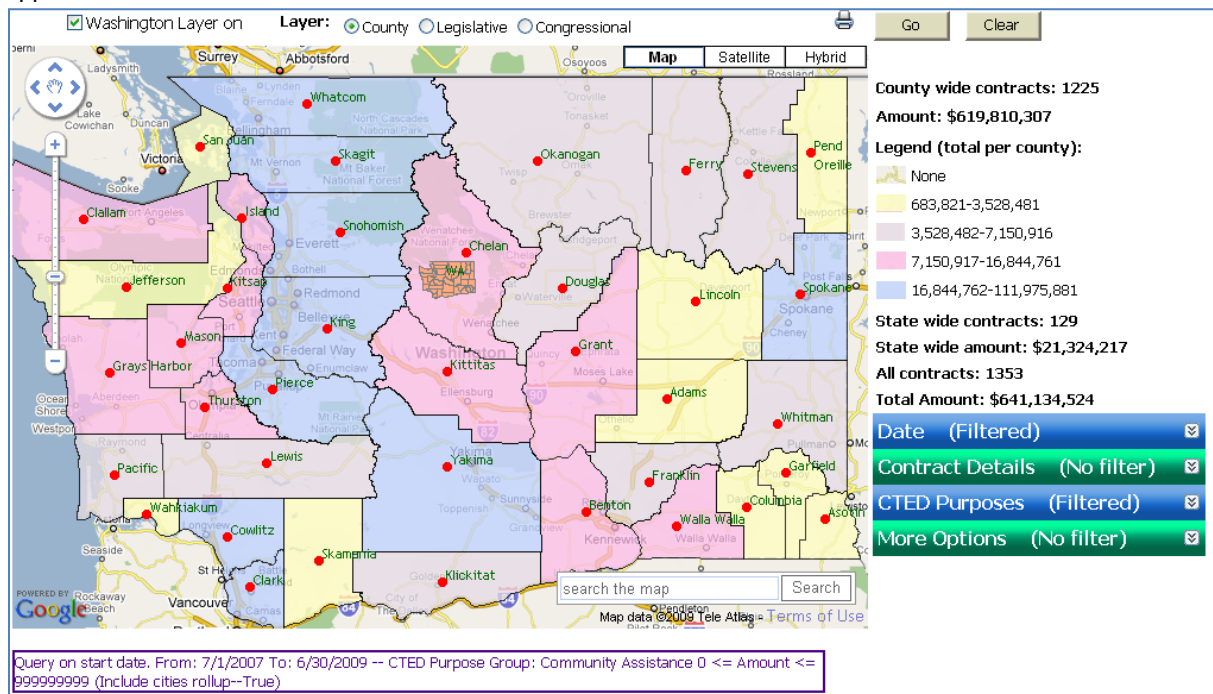
On the right side of screen the summary of query results is displayed. It contains total dollar amount and contract counts based on query criteria for state of Washington. The summary portion also contains a legend for the map colors based on dollar amount range. Each county based on the dollar amount spent on that county is assigned with the appropriate color code.

4.3.1   Hover over window

If you move the mouse pointer over the red dots in the center of a county, a small popup window containing summary values for that county is displayed. The following snapshot displays summary values for Yakima County. This summary contains total dollar value and contract counts for the selected county as well as a summary for Department of Commerce divisions doing the contracts within that county.
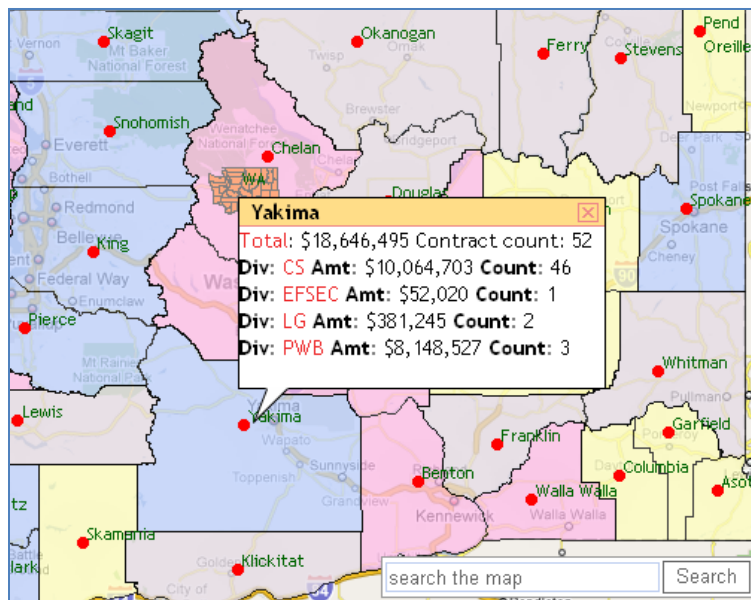
If you left click on mouse button when a popup window is displayed, the windows will stay permanently. You may close the window by clicking on at upper right corner of window.

If you have not already noticed, there is a small icon in the center of the map which represents only state wide contracts which are not associated with any specific county. Clicking on state symbol will display information for state wide contracts in the same way as for other counties.
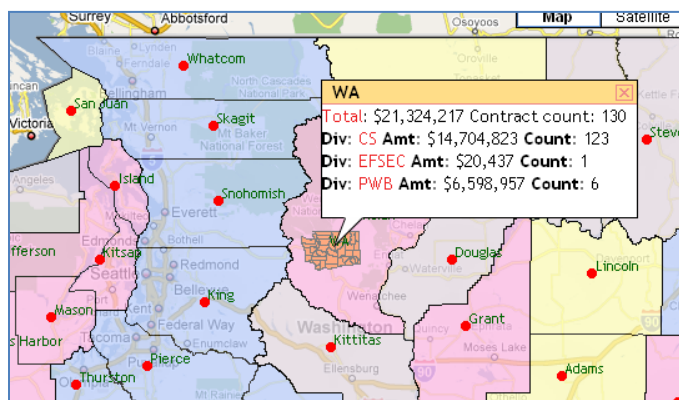
If you want to see several hover over tips at the same time, Click on the map while over a red dot within a county to make the hover over window permanent and then move to another county and select the hover over for that county. This will make the tip open while you hover over other counties. The next snapshot displays a map with several hover over windows open.
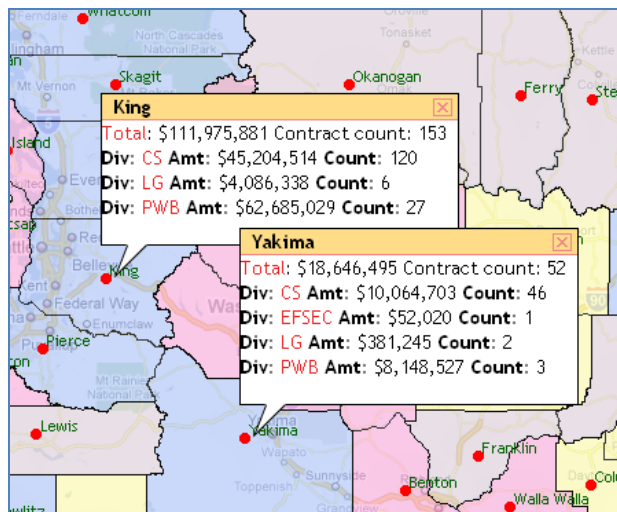
4.3.2 Pie chart report

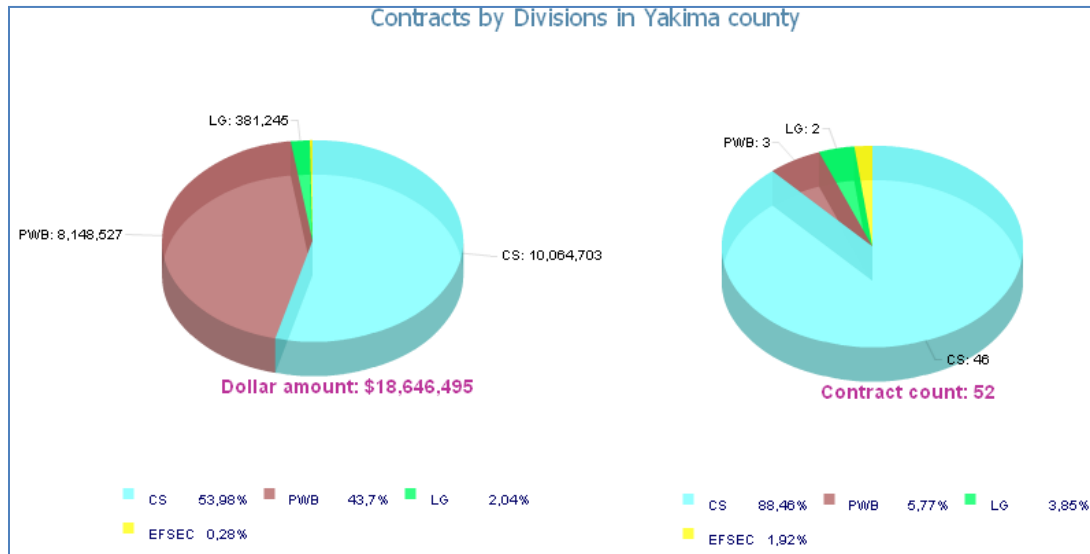Any value with red color within the popup window is a link which can produce a next level report. For example if you click on "Total" on Yakima's popup window, a pie chart report describing the breakdown of project among Department of Commerce divisions is displayed on a separate page. Please see the following snapshot.

If you click on a division acronym on Yakima's popup window, a pie chart report describing the breakdown of programs within that Department of Commerce division is displayed on a separate page. The following snapshot show programs for Client Services (CS) division

Here are the charts for Yakima County based on the selected query criteria.
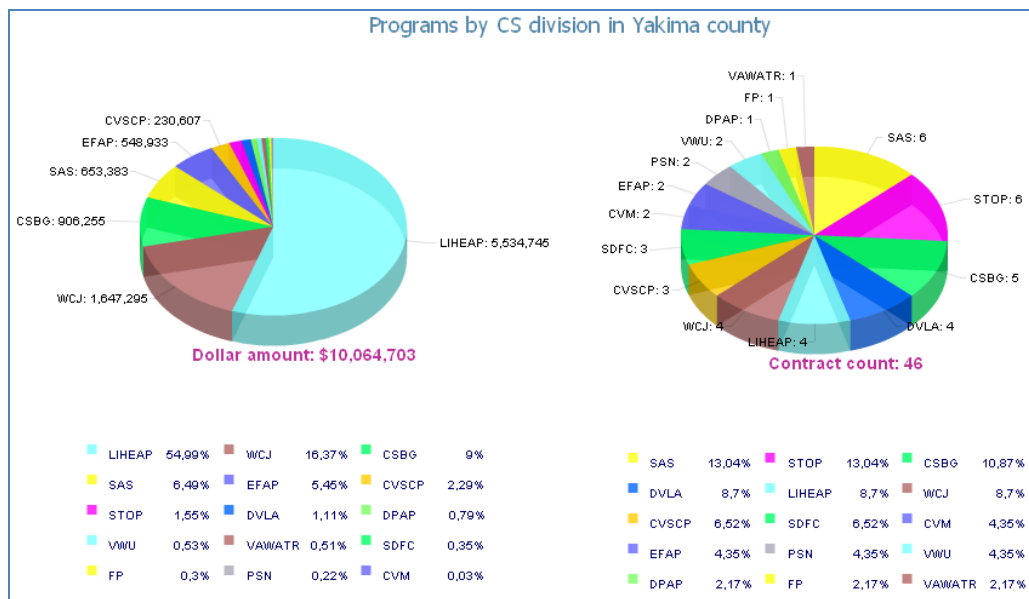
If you move the mouse over any of chart slice or the chart legend a small tooltip for that chart slice with more descriptive information is displayed. (see the following snapshot)

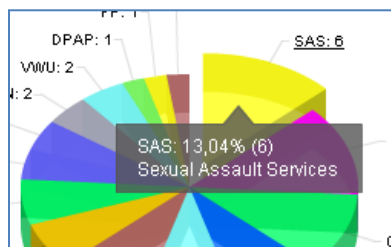It is possible to drill down further on each chart slice by clicking on that slice. This will generate a more detailed pie chart or a tabular report at the end. For example clicking on SAS chart slice will generate the following contract level report. Report header contains a summary of contracts count, total dollar amount as well as the query criteria.

CTED | Community, Trade and Economic Development

Query on start date. From: 7/1/2007 To: 6/30/2009 -- CTED Purpose Group: Community Assistance 0 <= Amount <= 999999999 (Include cities rollup--True)

Contract Count: 6   Total Amount: $653,383

JurIDDesc	ContractNum	Purpose	Division	Program	Description	Type	Start Date	Term Date	Jur. Amount
Yakima	08-31110-119	Family Support	CS	SAS	Provide core and/or specialized services for victims of sexual assault	Client Services	7/1/2007	6/30/2008	161,527
Yakima	09-31110-119	Family Support	CS	SAS	To provide core and/or specialized services for victims of sexual assault.	Client Services	7/1/2008	6/30/2009	161,437
Yakima	08-31110-139	Family Support	CS	SAS	Provide core and/or specialized services for victims of sexual assault	Client Services	7/1/2007	6/30/2008	155,253
Yakima	09-31110-139	Family Support	CS	SAS	To provide core and/or specialized services for victims of sexual assault.	Client Services	7/1/2008	6/30/2009	154,166
Yakima	08-31110-317	Family Support	CS	SAS	Provide culturally and linguistically appropriate services for victims of sexual assault in marginalized communities	Client Services	7/1/2007	6/30/2008	11,000
Yakima	09-31110-317	Family Support	CS	SAS	To provide culturally and linguistically appropriate services for victims of sexual assault in marginalized communities.	Client Services	7/1/2008	6/30/2009	10,000

Total Amount: $653,383

4.3.3 Sorting the Report

JurIDDesc	ContractNum	Purpose	Division	Program	Description

You may sort the report on a column by clicking on the report column header. Report footer contains the page numbers if the report is more than one page. Clicking on each number will show the report content for the selected page.

4.3.4 Performing Query with contract count as paint option

This example is similar to the previous query with only difference of having map paint criteria to be based on number of contracts instead of dollar value. You should click on Contract radio button before executing the query.

This will cause the map to be painted based on contract counts as well as map legend display contract counts for each map color code. Please see the following snapshot
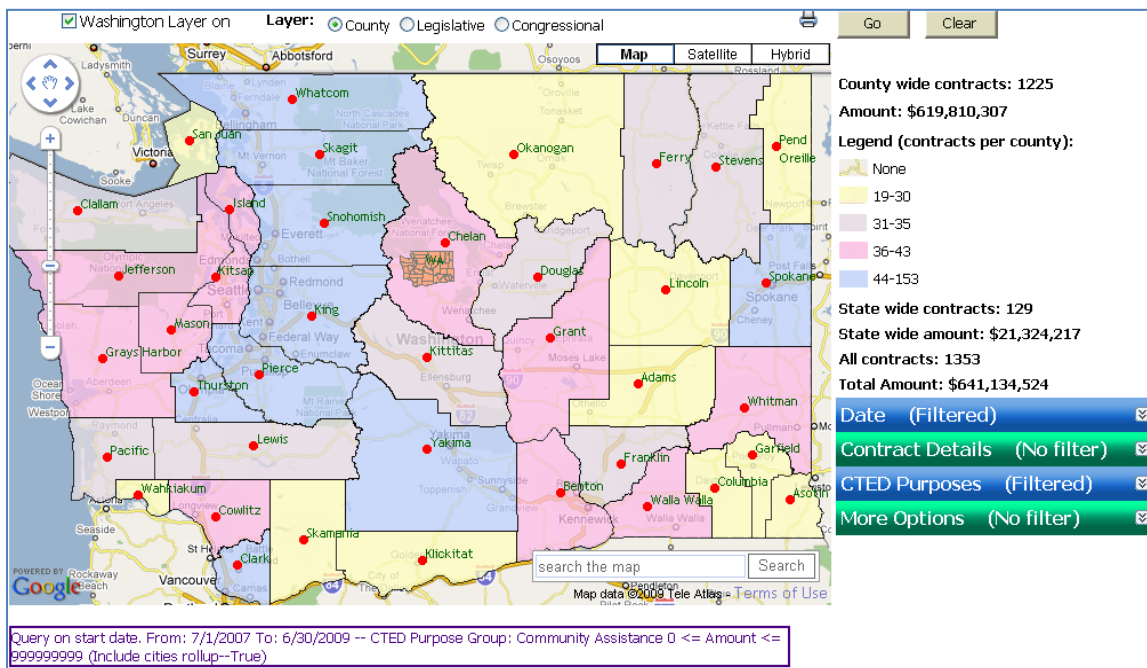
5 Terminology

5.1 Abbreviations

ARRA: American Recovery and Reinvestment Act

ESRI: Environmental Systems Research Institute

GIS: Geographic Information System

5.2   Legislative District

To determine legislative district amounts, the benefitting jurisdiction amounts for each contract are evenly distributed to each district within the jurisdiction. Here's an example of how the proration works for a contract benefitting Thurston County:

Jurisdiction Benefiting

Amend#	Jurisdiction	New Amount	%
	Thurston--County of	$4,000.00	100%
Totals 1 record		$4,000.00	100%

Leg/Cong Districts Benefiting

Legislative

Leg District	%
Leg Dist 2	25
Leg Dist 20	25
Leg Dist 22	25
Leg Dist 35	25
Totals	100

Congressional

Cong District	%
Cong Dist 3	50
Cong Dist 9	50
Totals	100

In this case the amount for each legislative district is $1,000 and the amount for each congressional district is $2,000.

5.3   Purpose and Purpose Group

Purposes are defined as why the agency is investing. Purpose Groups are a more summarized version that groups several purposes together for ease in reporting. Follow this link for Purpose and Purpose Group Definitions